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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/749,782	12/28/2000	Sang Won Kang	EM/KANG/6351	6245

7590 01/16/2007  
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EXAMINER
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STORM, DONALD L

ART UNIT	PAPER NUMBER
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2626

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/16/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

09/749,782

Applicant(s)

KANG ET AL.

Examiner

Donald L. Storm

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 is/are allowed.
- 6) ☒ Claim(s) 5-8 is/are rejected.
- 7) ☒ Claim(s) 3-4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. PROSECUTION IS HEREBY REOPENED pursuant to DECISION ON PETITION mailed December 19, 2006.
2. The Applicant's amendment merits further consideration, further explanation, and further examination. Accordingly, the finality of the previous Office action, mailed July 13, 2005, is withdrawn. The AMENDMENT AND RESPONSE, filed October 6, 2006, has been entered. An action on the merits follows. To avoid abandonment of the application, the applicant must file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.116 (if this Office action is final).

#### ***Allowable Subject Matter***

3. Claim 1 is allowed.
4. Claims 3-4 would be allowable over the prior art of record if rewritten to overcome any objections or rejections under 35 U.S.C. 112(2), especially as appearing in this Office action.

#### ***Response to Amendment***

5. The Applicant's AMENDMENT AND RESPONSE, filed October 6, 2006 fails to comply with the requirements of 37 CFR 1.121. See MPEP § 714. To advance prosecution, the Applicant's AMENDMENT AND RESPONSE filed October 6, 2006, has been entered in full.
6. The 37 CFR 1.21(b)(1)(ii) requires markings to show all the changes relative to the immediate prior version of the paragraph.

In the amendment to page 12, line 11 to page 13, line 3, the change back to “optical” is not indicated by appropriate markings. Pending the Applicant’s next response, the Examiner will treat the change as a typographical error and that “optimal” is the word that the Applicant intends.

### ***Claim Informalities***

7. Claims 3, and by dependency claim 4, are objected to under 37 CFR 1.75(a) because some phrases and terminology need clarification of potentially confusing informalities, as follows.

a. In the amendment to claim 3, in the mathematical expression for  $E_{l,m}$ , the second occurrence of “}” (close braces) should probably be “)” (close parentheses).

b. In the amendment to claim 3, line beginning *where superscript T*, in the mathematical expression, the second occurrence of “}” (close braces) should probably be “)” (close parentheses).

c. In the amendment to claim 3, line beginning *determining the dot product*, in the mathematical expressions (two occurrences), the second occurrence of “}” (close braces) should probably be “)” (close parentheses).

8. Claims 4, 6, and 7 are objected to because the manner of making amendments is not in accordance with 37 CFR 1.121. For amendment to claims, 37 CFR 1.121(c)(2) requires that markings indicate the changes that have been made relative to the immediate prior version of the claims. See MPEP § 714(II)(C).

In the Applicant’s current amendments to the claims, markings do not show added subject matter, or do not show text of deleted matter, or do not indicate the status of each claim relative to relative to AMENDMENT AND RESPONSE, filed March 10, 2005, as follows:

- a. Claims 4, 6, and 7 are indicated as “(Currently amended)”. That indication appears to be inaccurate, because the version of the claim seems to be the same as the immediately prior version of the claim, and the claim is not marked up as though to indicate amended matter.
- b. In claim 7, last line, the text “~~an~~” of text previously deleted should not appear.

***Claim Rejections - 35 USC § 101***

9. The following is a quotation of 35 U.S.C. 101:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claims 5-8 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. (See OG Notices: 22 November 2005, “Guidelines for Subject Matter Eligibility”, for example at <http://www.uspto.gov/web/offices/com/sol/og/2005/week47/og200547.htm>).

11. Claim 5 recites steps that consist solely of manipulation of symbols or data. Taken as a whole, the claim is drawn to a mathematical method that manipulates parameters. Without setting a practical application for the determined values, the claimed invention as a whole does not produce a useful, concrete, and tangible result. A method that simply manipulates data is nonstatutory as a judicial exception under 35 U.S.C. 101 despite the fact that the data might have some utility and despite its implementation by computer. The focus is not on whether the steps taken to achieve a particular result are useful, tangible, and concrete, but on the practical application of the judicial exception by producing a result tied to the physical world that does not preempt the judicial exception. For example, results of the detecting and searching processes might produce a practical application if they transformed a physical storage medium or physical display device. However, mere manipulation of samples or symbols does not produce a useful and

tangible result. For such subject matter to be statutory, the claimed process must actively and positively recite a non-abstract result of the algorithm.

The further limitations of the dependent claims continue to describe the manipulation of symbols or data, and do not provide the necessary tangible result to satisfy the requirements of 35 U.S.C. 101.

### ***Response to Arguments***

12. The prior Office action, mailed July 13, 2005, objects to the specification and claims, and rejects claims under 35 USC § 102, citing Aldersberg, § 102, citing Yoon, and under the judicially created doctrine of obviousness-type double patenting. The Applicant's arguments and changes in AMENDMENT AND RESPONSE, filed October 6, 2006, have been fully considered with the following results.

13. With respect to objection to the specification because of confusing informalities, the changes entered by amendment remove the indicated grounds for objection. Accordingly, the objection is removed.

14. With respect to objection to the claims dependent upon rejected base claims, the claims have been rewritten as independent, the claims have amended to provide other base claims, or the claims have been canceled. Accordingly, the objections are removed.

15. With respect to objection to those claims needing clarification, amendments remove the indicated grounds of objection. Accordingly, the objections are removed. Please see new grounds of objection.

16. With respect to rejection of claims, the changes entered by amendment include subject matter previously indicated as allowable in the current independent claims. The whole structure and interaction expressed by the combination of all limitations is not made obvious compared to the prior art of record for the whole invention of the independent claims, particularly with arranging according to an element value of a reference row of the codebook. Accordingly, the rejections are removed.

***Conclusion***

17. Some patent correspondence and/or fees may be submitted using the Office's electronic filing system (EFS). See the Office's Internet Web site for additional information, for example [http:// www. USPTO. gov/ ebc/ ebc\\_faqs. htm](http://www.USPTO.gov/ebc/ebc_faqs.htm). Any response to this action may be mailed to:

**Mail Stop Amendment**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**or faxed to:**

(571) 273-8300, (for both formal communications intended for entry and for informal or draft communications, but please label informal fax as "INFORMAL" or "DRAFT")


Some patent correspondence may delivered by hand or delivery services, other than the USPS, addressed as follows and brought to U.S. Patent and Trademark Office, Customer Service Window, **Mail Stop Amendment**, Randolph Building, 401 Dulany Street, Alexandria, VA 22314

\*\*\*\*\* **IMPORTANT NOTICE** \*\*\*\*\*

The Examiner handling this application, who was assigned to Art Unit 2654, is assigned to **DIVISION 2626** as a result of consolidation in Technology Center 2600. Please include the new Division in the caption or heading of any communication. Your cooperation in this matter will assist in the timely processing of the submission and is appreciated by the Office.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald L. Storm, of Division 2626, whose telephone number is (571) 272-7614. The examiner can normally be reached on weekdays between 7:00 AM and 3:30 PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Inquiries regarding the status of submissions relating to an application or questions on the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 571-272-4100 between the hours of 6 a.m. and midnight Monday through Friday EST, or by e-mail at: [ebc@uspto.gov](mailto:ebc@uspto.gov). For general information about the PAIR system, see <http://pair-direct.uspto.gov>. If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
DONALD L. STORM  
PRIMARY PATENT EXAMINER

December 29, 2006

  
RICHEMOND DORVIL  
SUPERVISORY PATENT EXAMINER